

No.

9200124



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

FFR Cooperative

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (P.L. 554, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'FFR 555W'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D.C.
this 31st day of March in
the year of our Lord one thousand nine
hundred and ninety-three.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Egan
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT (as it is to appear on the Certificate) <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> FFR COOPERATIVE </div>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> VA85-54-290 </div>		3. VARIETY NAME <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> FFR 555W </div>	
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) <div style="border: 1px solid black; padding: 5px; min-height: 60px;"> P O Box 322 Battle Ground, IN 47920 </div>		5. PHONE (include area code) <div style="border: 1px solid black; padding: 5px; min-height: 60px;"> (317) 567-2115 </div>		<div style="border: 1px solid black; padding: 5px;"> FOR OFFICIAL USE ONLY PVPO NUMBER <div style="font-size: 1.2em; margin-top: 10px;">9200124</div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>FILING</div> <div>Date March 9, 1992</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div>Time</div> <div> <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. </div> </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>FEES</div> <div>Filing and Examination Fee: \$ 2150.-</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div>Date Dec 31, 1991</div> <div>Certificate Fee: \$ 250.00</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div>RECEIVED</div> <div>Date Mar. 1, 1993</div> </div> </div>	
6. GENUS AND SPECIES NAME <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Triticum aestivum </div>		7. FAMILY NAME (Botanical) <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Gramineae </div>			
8. CROP KIND NAME (Common Name) <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Wheat, Common </div>		9. DATE OF DETERMINATION <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> September 1, 1989 </div>			
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Corporation </div>					
11. IF INCORPORATED, GIVE STATE OF INCORPORATION <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Wisconsin </div>			12. DATE OF INCORPORATION <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> 1960 </div>		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <div style="border: 1px solid black; padding: 5px; min-height: 60px;"> Frank Spelbring FFR COOPERATIVE P O BOX 322 Battle Ground, IN 47920 </div> <div style="text-align: right; margin-top: 10px;"> (317) 567-2115 <small>PHONE (include area code):</small> </div>					
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety. </div> <div style="width: 50%;"> b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement. </div> <div style="width: 50%;"> c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety. </div> <div style="width: 50%;"> d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety. </div> <div style="width: 50%;"> e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership. </div> <div style="width: 50%;"> f. <input checked="" type="checkbox"/> Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____ </div> <div style="width: 50%;"> g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States." </div> </div>					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.) <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> YES (If "YES," answer items 16 and 17 below) <input checked="" type="checkbox"/> NO (If "NO," skip to item 18 below) </div>					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> YES <input type="checkbox"/> NO </div>			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED </div>		
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> YES (If "YES," through <input type="checkbox"/> Plant Variety Protection Act <input checked="" type="checkbox"/> NO <input type="checkbox"/> Patent Act. Give date: _____ </div>					
19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> YES (If "YES," give names of countries and dates) <input type="checkbox"/> NO US, 1991 SEPTEMBER 30, 1991 </div>					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT [Owner(s)] <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Frank Spelbring </div>		CAPACITY OR TITLE <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Marketing Director </div>		DATE <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> 12-20-91 </div>	
SIGNATURE OF APPLICANT [Owner(s)]		CAPACITY OR TITLE		DATE	

Wheat
'FFR 555W'

14A. Exhibit A: Parentage

FFR 555W was derived from one of six crosses in which 'Coker 76-35' was a common parent. F_1 seed of the six crosses including Coker 76-35/'Doublecrop', Coker 76-35/Va. 72-54-14, Coker 76-35/Va. 76-52-12, Coker 76-35/Va. 76-52-24, Coker 76-35//Coker 65-20/Arthur, and Coker 76-35/3/(Kavkaz//Coker 65-20/Arthur), F_1 was composited and advanced as a bulk population.

Va. 72-54-14 is a selection from the cross 'Blueboy'/3/'Atlas 50'/1950 Row 223/'Redcoat' or Redcoat sib. The 1950 Row 223 parent had leaf and/or stem rust resistance. Va. 76-52-12 is a selection from the cross 'Blueboy'/'Knox 62'. Va. 76-52-24 is a selection from the cross 'Blueboy'//Thorne *5/199-4/3/Blueboy Sel. The 199-4 parent was the F_1 from the cross of 'Asosan'/3/'Supresa'/'Redhart'/'Chancellor' with P55-47.1-5, which was a line in which the leaf rust resistance of Aegilops umbellulata was transferred into 'Chinese Spring'.

FFR 555W was selected in 1984 as a F_6 headrow, using a modified bulk breeding system. This selection was grown in an observation plot in 1985 as entry 290 in test 54. This line, designated as Va. 85-54-290, has been evaluated in the Virginia State Variety Trials since 1987.

A large increase block of Va. 85-54-290, approximately 64 ft. by 66 ft., was planted in 1987, rogued thoroughly for aberrant types, and harvested in 1988. Seed from this block was planted at the Foundation Seed Farm in 1989, and rogued to remove gross off-types. The current lot of Foundation seed (F_{12} generation), derived from this multiplication, still contains a small percentage of aberrant types, primarily later maturing, taller plants with dense heads, blue-colored glumes, and long rachis hairs. These ~~off-type~~ plants do not exceed 5% of the population, are readily identifiable, and are within acceptable limits for seed certification. FFR 555W is genetically stable in the sense that the variety can be maintained and reproduced via seed without changing its characteristics.

variant
AAA per letter
2 Mar 1995

Approximately 276 heads were selected from the 1987-88 increase block for use in establishing an improved lot of Breeder seed. These heads were threshed individually, and grown as headrows in 1988-89. Of the 276 headrows, 238 were saved and planted in individual six-row plots, three feet in length. A sample of seed from each headrow was also used to test each row for seedling reaction to a mixture of two mildew cultures, and to a single race of leaf rust. Of the 238 headrows evaluated, 227 had an intermediate to moderately susceptible reaction to mildew, and were susceptible to leaf rust. Upon consideration of greenhouse and field evaluations, 233 of the 238 plots were harvested and bulked. This Breeder seed of FFR 555W was provided to the Foundation Seed Farm, and will be the source of future seed multiplications. Within the limits of biological expectation, the Breeder seed of FFR 555W is uniform and stable.

FFR 555W Wheat

14B. Exhibit B: Novelty Statement

FFR 555W most closely resembles 'Coker 983', which is a sister line of Coker 76-35. FFR 555W has a red coleoptile color, while that of Coker 983 is white. Based on data from approximately 20 tests conducted over four years, FFR 555W was four inches taller and had a 2.6 lb/bu lower test weight than Coker 983. FFR 555W and Coker 983 express a similar level of resistance to powdery mildew (Erysiphe graminis DC f. sp. tritici E. Marchal) in the field; however, FFR 555W has a higher level of seedling resistance than Coker 983 based on their differential reaction to two mildew cultures with different virulence formulas. FFR 555W is moderately resistant to a mildew culture which is virulent on Pm4a and Pm7, and avirulent on Pm1, Pm2, Pm3a, Pm3b, Pm3c, Pm2 + Pm6, Pm8, and PmMA, while Coker 983 is moderately susceptible to this culture. FFR 555W also expresses an intermediate to moderate level of resistance to a mildew culture which is virulent on Pm2, Pm3a, Pm3c, Pm4a, and PmMA, and avirulent on Pm1 and Pm3b, while Coker 983 is susceptible to this culture. Evaluations at the Cereal Rust Laboratory, St. Paul, MN, indicate that FFR 555W has the Lr10 gene for leaf rust (Puccinia recondita Rob. ex Desm. f. sp. tritici) resistance, while Coker 983 has Lr18 in addition to Lr10. Further evaluations at the Cereal Rust Laboratory, have shown that FFR 555W is resistant to the stem rust (Puccinia graminis Pers. f. sp. tritici) race RKQS which is virulent on Sr5, Sr9b, Sr7b, Sr6, Sr8a, Sr9a, Sr36, Sr9b, Sr15, Sr16, and Sr13 + Sr17, and avirulent on Sr9e, Sr11, Sr13, Sr10, and SrTMP, while Coker 983 is susceptible to this race.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) FFR COOPERATIVE	FOR OFFICIAL USE ONLY PVPO NUMBER 9200124
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 4112 E. State Road 225 W. Lafayette, IN 47906	VARIETY NAME OR TEMPORARY DESIGNATION FFR 555W

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g., or) when number is either 99 or less or 9 or less.

1. KIND:

1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

1 = SPRING 2 = WINTER 3 = OTHER (Specify) _____ 1 = SOFT 3 = OTHER (Specify) _____
2 = HARD

1 = WHITE 2 = RED 3 = OTHER (Specify) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

FIRST FLOWERING LAST FLOWERING

4. MATURITY (50% Flowering):

NO. OF DAYS EARLIER THAN 1 = ARTHUR 2 = SCOUT 3 = CHRIS
 NO. OF DAYS LATER THAN 4 = LEMHI 5 = NUGAINE 6 = LEEDS
7 = TYLER 8 = COKER 916

5. PLANT HEIGHT (From soil level to top of head):

CM. HIGH
 CM. TALLER THAN 7 = TYLER 8 = COKER 916
 CM. SHORTER THAN 1 = ARTHUR 2 = SCOUT 3 = CHRIS
4 = LEMHI 5 = NUGAINE 6 = LEEDS

6. PLANT COLOR AT BOOTING (See reverse):

1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHUR COLOR: Red at base of stamen

1 = YELLOW 2 = PURPLE

8. STEM:

Anthocyanin: 1 = ABSENT 2 = PRESENT
 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
(sometimes 4) (on margins)
 NO. OF NODES (Originating from node above ground)
 Waxy bloom: 1 = ABSENT 2 = PRESENT
 Internodes: 1 = HOLLOW 2 = SOLID
 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

Anthocyanin: 1 = ABSENT 2 = PRESENT
 Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

Flag leaf at booting stage: 1 = ERECT 2 = RECURVED
3 = OTHER (Specify): _____ Flag leaf: 1 = NOT TWISTED 2 = TWISTED
 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
 MM. LEAF WIDTH (First leaf below flag leaf) CM. LEAF LENGTH (First leaf below flag leaf):

11. HEAD:

1 - Density: 1 = LAX 2 = DENSE Middense Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE
4 = OTHER (Specify) Fusiform

Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED
5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

CM. LENGTH MM. WIDTH

12. GLUMES AT MATURITY:

Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)
3 = LONG (CA. 9 mm.) 8.2 - 8.7 mm Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)
3 = WIDE (CA. 4 mm.) 3.6 - 3.8 mm

Oblique to square

2 - Shoulder: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED
shape: 4 = SQUARE 5 = ELEVATED 6 = APICULATE Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR: 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN: 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT: 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL Check: 1 = ROUNDED 2 = ANGULAR
w/ flange of endosperm on cheek

Brush: 1 = SHORT 2 = MEDIUM 3 = LONG Brush: 1 = NOT COLLARED 2 = COLLARED
Slightly

Phenol reaction 1 = IVORY 2 = FAWN 3 = LT. BROWN
(See instructions): 4 = BROWN 5 = BLACK

Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

MM. LENGTH MM. WIDTH GM. PER 1000 SEEDS

17. SEED CREASE:

Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'
2 = 80% OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS KERNEL 'LEMHI' Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 35% OR LESS OF KERNEL 'CHRIS'
3 = 50% OR LESS OF KERNEL 'LEMHI'

Narrow Middeep

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) *Genes proposed for said Variety by Cereal Rust-
Lab, St. Paul, MN

STEM RUST (Races) Broadly LEAF RUST (Races) Lr 10* STRIPE RUST (Races) LOOSE SMUT

Powdery Mildew Resistant* BUNT OTHER (Specify) _____

Adult-Plant Resistance

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

SAWFLY APHID (Bydv.) GREEN BUG CEREAL LEAF BEETLE

OTHER (Specify) Hessian Fly HESSIAN FLY GP A B C
Race: L RACES: D E F G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering		Seed size	
Leaf size		Seed shape	
Leaf color		Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- L.W. Briggles and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.
- W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

FFR 555W Wheat

14D. Exhibit D: Additional Description of FFR 555W

Since FFR 555W has not been tested in comparison with any of the six cultivars indicated for wheat in Exhibit C, data on its performance in Virginia over a period of four years (1987-1990) are presented in the tables which follow this section.

FFR 555W was also evaluated in the 1989-90 Uniform Southern Soft Red Winter Wheat Nursery. Performance data are summarized in the USDA nursery report compiled by Dr. Harold Bockelman.

Quality evaluations made at the Soft Wheat Quality Laboratory, Wooster, OH, indicate that FFR 555W has good milling and baking properties compared with standard checks. Quality data for FFR 555W are presented in the tables which follow this section.

Table 1. Average Performance of Wheat Cultivars Evaluated in Virginia, 1986-90.†

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GRAIN YIELD bu/ac							
	1990 (6)	1989 (6)	1988 (8)	1987 (6)	1986 (7)	1987-90 (26)	1986-90 (33)
Madison	71	73	87	65	54	74	70
Wakefield	69	80	93	67	58	77	73
FFR 555W	84	79	91	68	---	81	---
Massey	71	73	77	63	51	71	67
Tyler	69	64	71	53	52	64	62
Saluda	70	66	71	57	50	66	63
Florida 302	76	76	82	64	53	75	70
Coker 916	67	65	82	62	50	69	65
Coker 983	75	71	84	66	51	74	69
Coker 833	75	64	75	62	51	69	65
Pioneer 2550	70	64	78	53	49	66	63
Pioneer 2555	68	68	84	60	---	70	---
Pioneer 2548	79	69	---	---	---	---	---
FFR 568	75	69	---	---	---	---	---
L.S.D. (0.05)	4.0	---	8.6	6.5	5.1	---	---
TEST WEIGHT lbs/bu							
	1990 (4)	1989 (6)	1988 (8)	1987 (6)	1986 (7)	1987-90 (24)	1986-90 (31)
Madison	58.1	55.9	58.0	55.4	59.6	56.9	57.4
Wakefield	57.7	55.7	58.3	55.3	59.6	56.8	57.3
FFR 555W	57.9	55.7	58.3	53.8	---	56.4	---
Massey	59.0	57.4	58.9	57.0	60.1	58.1	58.5
Tyler	57.0	55.5	57.9	54.4	58.8	56.2	56.7
Saluda	60.7	57.2	60.2	56.7	62.2	58.7	59.4
Florida 302	57.2	54.2	57.9	54.3	59.1	55.9	56.5
Coker 916	55.8	55.4	58.5	55.6	60.3	56.3	57.1
Coker 983	59.9	57.8	60.2	57.9	61.3	59.0	59.4
Coker 833	58.0	55.6	58.2	56.0	58.6	57.0	57.3
Pioneer 2550	57.5	55.1	58.9	55.0	60.1	56.6	57.3
Pioneer 2555	57.7	54.8	58.2	54.5	---	56.3	---
Pioneer 2548	58.1	54.2	---	---	---	---	---
FFR 568	58.3	56.0	---	---	---	---	---
L.S.D. (0.05)	---	---	1.0	1.2	0.7	---	---

†The number in parentheses below column headings indicates the number of tests on which data are based.

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Table 1a. Average Performance of Wheat Cultivars Evaluated in Virginia, 1986-90.†

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DATE HEADED MAR. 31+							
	1990 (3)	1989 (3)	1988 (6)	1987 (5)	1986 (5)	1987-90 (17)	1986-90 (22)
Madison	26	35	34	40	29	34	33
Wakefield	32	38	39	43	35	38	37
FFR 555W	28	38	40	42	—	37	—
Massey	29	37	37	41	33	36	35
Tyler	32	40	41	44	36	39	39
Saluda	28	38	38	41	33	36	36
Florida 302	30	37	38	42	35	37	36
Coker 916	25	33	34	38	28	33	32
Coker 983	29	37	37	42	33	36	36
Coker 833	33	41	42	44	36	40	39
Pioneer 2550	32	39	41	42	36	39	38
Pioneer 2555	28	37	37	40	—	36	—
Pioneer 2548	30	37	—	—	—	—	—
FFR 568	31	38	—	—	—	—	—
L.S.D. (0.05)	—	—	2.0	1.3	2.0	—	—

PLANT HEIGHT Inches							
	1990 (3)	1989 (3)	1988 (8)	1987 (6)	1986 (7)	1987-90 (20)	1986-90 (27)
Madison	36	39	41	41	34	39	38
Wakefield	38	41	43	42	35	41	40
FFR 555W	36	38	41	40	—	39	—
Massey	38	41	43	43	36	41	40
Tyler	39	43	45	43	37	43	41
Saluda	34	36	39	38	31	37	36
Florida 302	39	41	42	41	33	41	39
Coker 916	34	36	39	37	32	37	36
Coker 983	33	35	36	36	29	35	34
Coker 833	38	41	43	42	34	41	40
Pioneer 2550	37	39	42	40	32	40	38
Pioneer 2555	36	38	37	40	—	38	—
Pioneer 2548	35	36	—	—	—	—	—
FFR 568	39	40	—	—	—	—	—
L.S.D. (0.05)	—	—	1.4	1.0	2.0	—	—

†The number in parentheses below column headings indicates the number of tests on which data are based.

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Table 1b. Average Performance of Wheat Cultivars Evaluated in Virginia, 1986-90.†

	LODGING %						Winter Survival %
	1990 (2)	1989 (5)	1988 (7)	1987 (4)	1986 (3)	1987-90 (18)	1988 (1)
Madison	13	9	14	35	0	18	100
Wakefield	14	16	21	29	0	20	100
FFR 555W	8	9	8	25	---	13	100
Massey	30	23	27	46	1	32	100
Tyler	16	10	11	25	0	16	100
Saluda	11	21	29	43	0	26	100
Florida 302	6	5	5	35	0	13	25
Coker 916	20	24	19	32	3	24	100
Coker 983	8	10	3	24	0	11	73
Coker 833	21	36	11	31	3	25	100
Pioneer 2550	21	15	22	25	0	21	100
Pioneer 2555	7	6	4	15	---	8	100
Pioneer 2548	6	5	---	---	---	---	---
FFR 568	7	7	---	---	---	---	---
L.S.D. (0.05)	---	---	14	22	---	---	---

†The number in parentheses below column headings indicates the number of tests on which data are based.

Table 2. Reaction of Wheat Cultivars to Diseases in Virginia, 1986-90.†

	Powdery Mildew					Leaf Rust				Soilborne Viruses			
	%					%				0-5‡			
	1990 (5)	1989 (4)	1988 (7)	1987 (6)	1986 (5)	1990 (5)	1988 (2)	1987 (1)	1986 (1)	1990 (1)	1988 (1)	1987 (1)	1986 (1)
Madison	16	6	1	1	8	3	1	1	17	0	1	1	1
Wakefield	46	7	0	0	5	6	3	22	7	3	60	5	1
FFR 555W	11	3	8	4	---	26	14	15	---	3	40	1	---
Massey	9	4	4	3	1	40	39	38	33	0	1	0	0
Tyler	42	25	32	32	15	37	45	57	47	3	10	10	1
Saluda	56	39	40	40	38	11	15	2	20	5	100	90	70
Florida 302	17	4	5	1	1	4	0	0	1	4	100	80	98
Coker 916	12	8	9	7	2	6	1	4	0	3	100	7	17
Coker 983	2	2	3	1	1	38	3	0	4	3	100	17	1
Coker 833	17	12	18	13	8	0	5	5	0	1	2	1	2
Pioneer 2550	29	14	30	25	20	26	11	6	1	4	63	13	63
Pioneer 2555	34	18	28	24	---	4	0	2	---	4	0	0	---
Pioneer 2548	24	10	---	---	---	1	---	---	---	5	---	---	---
FFR 568	14	5	---	---	---	7	---	---	---	1	---	---	---
L.S.D. (0.05)	---	---	9	10	9	---	13	---	---	---	---	---	---

† The number in parentheses below column headings indicates the number of tests on which data are based.

‡ 0=Resistant; 5=Susceptible

Table 3. Soft Wheat Milling and Baking Quality Evaluations for 'FFR 555W' Wheat, 1987-1989†.

Entry	Milling Qual. Score/ Grade	Baking Qual. Score/ Grade	Test Wt.	Break Flour Yield	St. Gr. Flour Yield	Straight Grade Flour		Micro AWRC %	Cookie Diameter CM.	Top Grain	Soft Equiv.	Red Passes	Friability	E.S.I.	Mill-ability
						Flour Ash %	Flour Pro. %								
1987 Virginia															
FFR 555W	99.1 B	93.1 C	74.1		72.2	.35	6.9	51.7	18.0	6	64.6				
Saluda (Std.)	100 A	100 A	77.8		70.4	.31	6.9	54.3	18.4	6	68.4				
Tyler	101.8 A	98.7 B	73.3		71.3	.3	6.7	53	18.1	6	67.7				
Massey	101.6 A	94.6 C	76.4		71.7	.33	7.5	53.5	18.2	6	65.4				
LSD			1.17		0.8	0.035	0.56	1.49	0.25	2.06	3.7				
1988 Virginia															
FFR 555W	100. A	110.2 A	62	26.4	78.1	.42	9.05	51.6	17.86	5		7	29.2	9.1	114.7
Saluda (Std.)	100 A	100 A	63.2	29.1	76.4	.37	9.7	54.4	17.73	2		7	27.9	10.3	111.1
Tyler	97.1 B	91.9 C	61.8	27.3	76.1	.36	9.34	52.1	17.44	4		7	27.6	11.2	108.7
LSD			0.58	0.748	0.90	0.02	0.54	1.74	0.24	0.83			0.33	0.95	9.22
1989 Virginia															
FFR 555W	101.7 A	106.0 A	74.7		76.3		7.70	53.7	18.2	6	59.1				
Massey (Std.)	100.0 A	100.0 A	76.7		75.4		8.87	55.6	17.9	4	59.8				
Tyler	99.1 B	106.9 A	75.0		75.3		7.61	55.3	18.05	5	60.7				
LSD			1.155		0.81		0.718	1.529	0.239		3.216				

† Milling and baking evaluations performed by the USDA Soft Wheat Quality Laboratory at Wooster, OH.

Exhibit E. Statement of the Basis of Applicant's Ownership

FFR 555W was bred and developed by plant Breeders at Virginia Polytechnic Insititute and State University (VPI) at Blacksburg, Virginia. Under an agreement between FFR cooperative and VPI, exclusive, proprietary rights were granted to FFR in a letter dated March 24, 1989, signed by Robert Q. Cannell, Head of the Department of Agronomy.